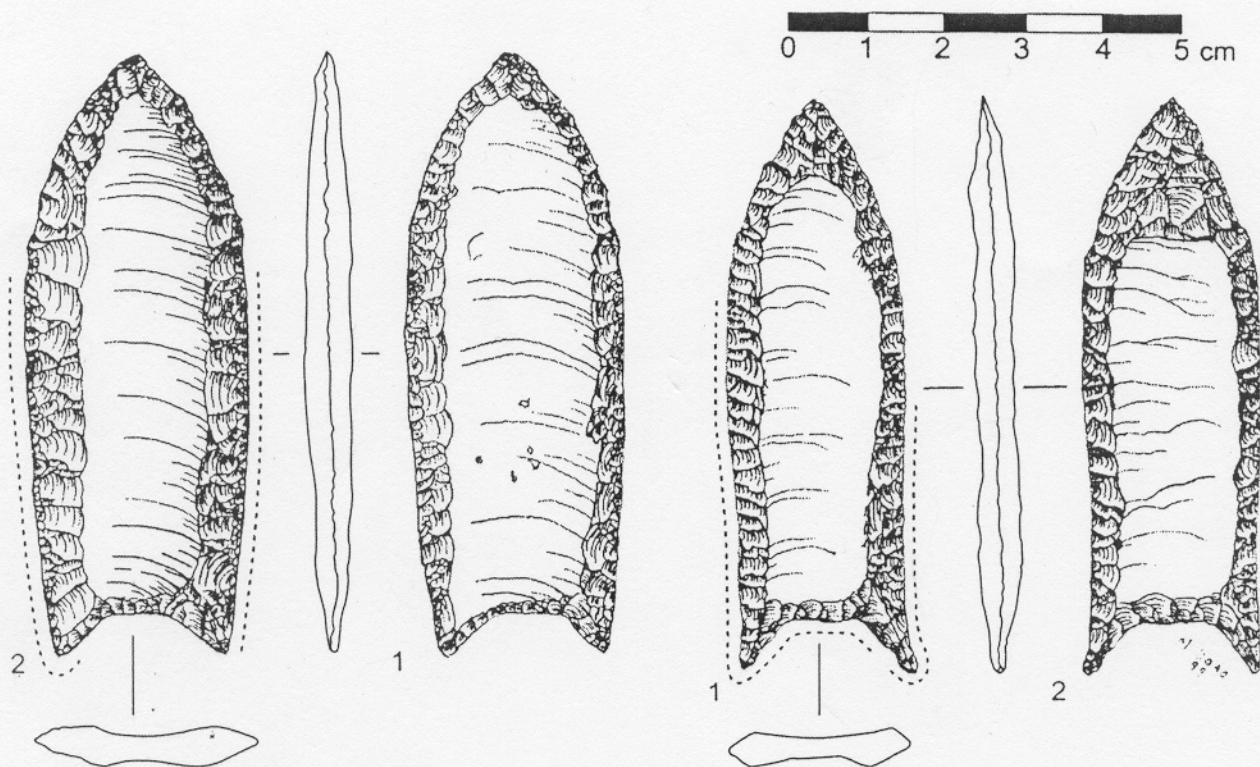


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8. EXPLORING THE CLOVIS-GAINEY-FOLSOM CONTINUUM: TECHNOLOGICAL AND MORPHOLOGICAL VARIATION IN MIDWESTERN FLUTED POINTS

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Fluted projectile points are a distinctive hallmark of the Early Paleoindian period throughout much of the New World. Numerous fluted points and preforms have been documented from the midwestern U.S., though their chronology remains rather poorly documented in this region. Radiocarbon dates are few and far between, and most midwestern fluted point sites lack reliable and secure chronological controls. In the absence of direct chronological data, interpretations of the Early Paleoindian settlement of this part of North America have hinged on various perceived relationships and inter-relationships between fluted points from the Midwest and those from other, outlying regions where the age and temporal relationships of these artifacts are better understood. Therefore, fluted point typology has played a major role in developing models of Early Paleoindian colonization and lifeways in not only the Midwest, but other regions as well (e.g., Anderson 1990; Anderson and Gillam 2000; Kelly and Todd 1988; Ranere 1997; Storck 1991).

Unfortunately, some fluted point types in this region have not been clearly defined, and type

name designations have fallen into common usage without critical evaluation. Similarities and differences between some fluted point varieties have been impressionistic at best and in some cases are based on premises that ignore morphological variation due to raw material constraints, resharpening, and repair. This has led to a lack of rigor in fluted point type identifications and/or potentially erroneous conclusions. Given the critical role of fluted point typology in midwestern Paleoindian studies, it is all the more important that this subject be approached from a comprehensive and carefully evaluated position.

This chapter examines fluted point complexes in the Midwest from both a technological and morphological perspective. Data derived from eight collections of fluted points and fluted preforms will be used to more clearly define the differences and similarities among them. The goal of this chapter is to provide a critical analysis of the fluted point type designations that are in common use in the region. In particular, we examine and evaluate the Gainey fluted point variety as it compares to Clovis and Folsom points. Though the

name Gainey has come to be widely used in the Great Lakes and Midwestern regions, the distinction between Gainey points and Clovis points, though often inferred, has not been defined in sufficient detail. The names Gainey and Clovis carry meanings that go beyond semantics, as Gainey points are generally believed to be of post-Clovis age (Deller 1989; Deller and Ellis 1988). Therefore, the identification of a particular fluted point as Gainey or Clovis carries important implications for the nature and timing of cultural events in the paleogeography of North America.

A BRIEF HISTORY OF FLUTED POINT TYPOLOGY

The discovery of finely flaked stone projectile points in association with bones of extinct bison in 1926 and 1927 near Folsom, New Mexico (Figgins 1927; Cook 1927) pushed back by thousands of years the widely accepted antiquity of human occupation of the New World (see Meltzer 1983, 1989, 1991a). The distinctive fluted points from this site came to be known by the name Folsom, and once the age and significance of these artifacts was recognized, fluted points achieved a status as index fossils in American archaeology that continues today.

A distinct form of fluted point was recovered at the Dent site in Colorado about six years after the Folsom discovery (Figgins 1933). Similar points recovered from Blackwater Draw Locality 1 near Clovis, New Mexico (Sellards 1952), resulted in the eventual naming of the Clovis point type and the Clovis Complex.

Between the discovery of the Folsom type site and the eventual adoption of the type name "Clovis," it was not uncommon for researchers to refer to any fluted point as a Folsom or Folsomoid (Roosa 1965:92; Munson 1990:255). As additional Clovis sites such as Naco (Haury et al. 1953), Lehner Ranch (Haury et al. 1959), Miami (Sellards 1938, 1952), and Murray Springs (Hemmings 1970) were excavated, the Clovis complex was eventually regarded as a separate cultural tradition, slightly older than Folsom. At the Yuma Conference in

1941, it was proposed that the name Folsom be used strictly for the thin, well-fluted, finely pressure retouched specimens (see Wormington 1948).

Comparatively larger, thicker forms with shorter flutes were called Clovis Fluted if they occurred in the west, and Ohio Fluted if they occurred in the east (Munson 1990:256). The name Ohio Fluted never came into popular usage, and the name Clovis was used rather indiscriminately for any and all partly fluted points in the east.

Marie Wormington (1939) was one of the first archaeologists to attempt to synthesize data generated on the Paleoindian period on a continent-wide scale. By the fourth edition of her book, *Ancient Man in North America*, she provided a typology of Paleoindian points that is still widely cited, nearly forty years after its publication (1957:263-271). Wormington (1957) briefly reviewed fluted points occurring "east of the Plains" from some of the best known sites of the day, including the Carlston Annis (W. Webb 1950) and Parrish Village (W. Webb 1951) sites in Kentucky, the Shoop site near Enterline, Pennsylvania (Witthoft 1952), the Williamson site in Virginia (McCary 1951), the Quad site in central Alabama (Soday 1954), the Hardaway site in North Carolina (Coe 1964), the Bull Brook site in Massachusetts (Byers 1954, 1955, 1959; Jordan 1960), and the Reagan site in Vermont (Ritchie 1953). Wormington (1957:83) recognized the great morphological variation among fluted points in the east and noted in particular that some of them have a constriction at the base that produced a "fish-tailed effect" (Wormington 1957:263), but she also acknowledged similarities between western and eastern fluted point specimens.

Witthoft's (1952) analysis of fluted points and preforms from the Shoop site in Pennsylvania has had a continued influence on fluted point studies in the east. Witthoft described the "Enterline" fluting technique which involved the preparation of parallel guide flakes prior to the removal of channel flakes. He further wrote that the bases of fluted point preforms from the Shoop site "show no preparation of a well-defined nipple for a striking platform, but

rather are slightly convex with a thick blunt angle at the edge" (Witthoft 1952:481). He contrasted this with the Great Plains Folsom fluting technique that involved the preparation of a basal nipple from which channel flakes were struck. Several years later, the "Enterline" fluting technique was championed by Mason (1958:13, Fig. 28), who also claimed that Clovis points were fluted from a beveled platform. In a definition of the Clovis point type published by Roosa in 1965, it is also stated that "Clovis points have a non-Folsom fluting technique in which there was some beveling and re-beveling of the base to provide striking platforms for fluting the two faces, but little or no careful chipping or grinding to prepare the striking platforms." Based on his interpretation of eastern fluted points, Roosa (1965:92) was "convinced that there are few if any true Clovis points from the area east of the Mississippi." He proposed several type names including Bull Brook, Enterline, and Parrish for eastern fluted points that were commonly confused with western Clovis. In Roosa's terms, Bull Brook and Parrish points were fluted using the Folsom fluting technique and by implication, are of post-Clovis age.

The concept that Clovis points were fluted from a simple beveled base while Folsom points were fluted from isolated "nipple" platforms has been repeatedly stated in Paleoindian literature (see Judge 1973; Haynes 1982; Meltzer 1984, 1985; Stoltman 1993). How the "beveled base" fluting of Clovis points became established is difficult to ascertain. At the time Mason (1958) and Roosa (1965) were publishing descriptions of fluted point manufacturing techniques, little data were available on Clovis preforms, and serious replication experiments were not widely practiced. Rather, these interpretations appear to have been made mostly from the appearance of *finished* fluted points (e.g., Roosa 1965:95). The manner in which the bases of points were prepared for fluting is difficult if not impossible to determine on finished points because all traces of the striking platform prepared for flute removal are commonly removed in the process of trimming the bases of these points and grinding their haft ele-

ments. Generally, the assumption appears to have been made that because Clovis points exhibit comparatively short flutes and Folsom points have generally long flutes that the difference is entirely due to the presence or absence of an isolated striking platform in fluting process. Although clearly embedded in the literature, this concept has not been adequately evaluated since its formation.

The idea that Clovis points were fluted without the aid of isolated striking platforms can be questioned on several grounds. First, the "beveled base" concept is not consistent with other aspects of Clovis biface technology which emphasized the careful isolation of striking platforms in the primary and secondary thinning stages. Unfinished Clovis points from the East Wanatchee cache as well as the Badger Mountain Clovis, both from Washington state, exhibit well-isolated, projecting lobes prepared for the removal of lateral thinning flakes. Second, western Clovis preforms that were broken in the fluting process or which were not subsequently retouched following the removal of the channel flake routinely exhibit deep, narrow flute scar initiations. This feature would be difficult, if not impossible, to consistently produce from striking platforms that were not isolated. Several bifacial preforms from the Anzick Clovis burial in Montana exhibit these deep, narrow flute scar initiations (Morrow n.d.).

The Gainey type is essentially synonymous with Roosa's Bull Brook type. Named for the type site in Genesee County, Michigan, the Gainey type name has come into wide usage among Paleoindian researchers throughout the Great Lakes and Midwest (see Dellar and Ellis 1989). Roosa (1965:96) offers little indication of how Bull Brook (now commonly called Gainey) points are to be distinguished from Clovis points except that they were made using the Folsom fluting technique. A brief descriptive report of the Gainey site was published in 1984 by Simons, Shott, and Wright. In 1988, Dellar and Ellis described the Gainey Complex of the Great Lakes region. Their description of Gainey points emphasizes their general similarity to Clovis points (Dellar and Ellis 1988:255) but also indicates that

Gainey points are better fluted, have a well-defined medial ridge, and exhibit the Barnes basal finishing technique, a type of fluting that we refer to as composite fluting (see Morrow 1995). Composite fluting is not a diagnostic indicator of the Gainey type as this form of basal flaking occurs on other fluted point varieties, including western Clovis. "Better fluting" is characteristic on Gainey points, but there is considerable variation in the length and form of the flutes. The ambiguity of the Gainey fluted point type, and problems with previous notions of fluted point manufacturing techniques has lead to a situation in which often unstated, or sometimes loosely defined "rules of thumb" are used in assessing mid-western fluted points.

A RE-EVALUATION OF FLUTED POINT COMPLEXES IN THE MIDWEST

Metric and morphological data derived from eight midwestern fluted point and preform assemblages will be used here to characterize the morphological attributes and manufacturing technology of Clovis, Gainey, and Folsom points. The Ready/Lincoln Hills site in Jersey County, Illinois, provides the largest sample of fluted points and preforms used in this study. Previous analysis of the fluted bifaces from Ready/Lincoln Hills (Morrow 1995, 1996) has provided a more detailed understanding of Clovis point manufacture. Smaller assemblages of Clovis points and preforms from the Martens site in St. Louis County, Missouri (Koldehoff et al. 1995), and the Struttman-Eikel site in Gasconade County, Missouri (Morrow 1997), are also representative of the Clovis type.

Data recorded from the fluted points and preforms from the Gainey site in Genesee County, Michigan (Simons et al. 1984), will be used to characterize the Gainey type and to bring out the similarities and differences between Gainey and Clovis. Similar points and preforms recorded from the Hawk's Nest site in Lake County, Illinois (Amick et al. 1997), the Steinmann site in Madison County, Illinois, and the Taylor site in Effingham County, Illinois, are also used to exemplify the Gainey type.

Finally, information collected on Folsom points and preforms from various sites and locations in Mills County, Iowa (T. Morrow and J. Morrow 1999), provide the comparative data on Folsom point morphology and technology.

Clovis Points

The fluted bifaces from the Ready/Lincoln Hills site exhibit numerous characteristic hallmarks of Clovis biface manufacture. Clovis bifaces in various stages of manufacture are well-represented in the Simon and East Wanatchee caches and the Anzick burial assemblage—all from western North America. These bifaces exhibit a distinctive reduction sequence and highly specific striking platform and flake scar attributes. It was during the primary thinning stage that a Clovis biface began to take on its distinctive appearance. Following initial edging and trimming, Clovis bifaces were further reduced by the removal of deep, transverse percussion, thinning flakes. This primary thinning produced large, fully flaked stage 3 bifacial blanks with regularized cross-sections and roughly ovate outlines. In some cases, the flake removals were on opposing faces from opposite edges, as seen on many western Clovis bifaces (Bradley 1982; Frison 1991b; Gramly 1993), and in others, they appear to have been more random. This type of intensive biface thinning produces broad bifaces with flattened cross sections and a flaking pattern consisting of several very large, relatively widely-spaced, long flake scars.

The key to Clovis biface thinning lay in specially prepared striking platforms. Preparation of striking platforms was a critical step in the successful removal of biface thinning flakes. Isolation of the striking platform focused the percussion blow precisely where the knapper chose to remove a flake, and channeled the energy into a specific path of flake removal. Striking platforms may have been isolated in both the vertical and horizontal dimensions. Placement of the striking platform in relation to the center plane of the biface determined the depth of the flake initiation and influences the sub-

sequent length and mass of the flake removed (e.g., Callahan 1979).

Clovis striking platforms were well isolated lobes that were positioned in the centerplane of each biface and typically projected at least 2 to 3 mm from the biface edge. These isolated lobes occurred around the periphery of the biface at fairly widely spaced intervals, and usually were aligned with prominent ridge crests located between previous flake removals. Good examples of these isolated platform lobes can be seen on the Badger Mountain fluted obsidian biface found by a farmer while plowing a wheat field near East Wenatchee, Washington (Fig. 8.1), as well as some of the East Wenatchee/Richey cache fluted bifaces (Gramly 1993: 32, 33, Figs. 52, 53; see also M. Johnson 1993). Soft hammer percussion flakes detached using this type of striking platform have deep, narrow initiations and often span a large portion of the width of the biface, sometimes terminating in an *outré passé*, wherein a portion of the opposite edge of the biface is also removed. Using this flaking technique, one can greatly reduce the thickness of a biface with a minimum number of flake removals (Bradley 1982, 1991; J. Morrow 1995; M. Johnson 1993).

This biface thinning strategy is characteristic of large Clovis bifaces and large Clovis points recovered from the Anzick site (Lahren and Bonnicksen 1974; Wilke et al. 1991), and the Fenn (Frison 1991b), East Wenatchee/Richey-Roberts (Mehringer 1988; Gramly 1993), and Simon (Butler 1963; Woods and Titmus 1985) caches. Refitted flakes from the Sheaman site in Wyoming (Bradley 1982) and the Murray Springs site in Arizona (Haynes 1982: Fig. 5) also demonstrate this technique.

Numerous stage 3 and 4 bifaces from the Ready/Lincoln Hills site exhibit just this type of flaking. Bifaces recovered from the Martens and Struttman-Eikel sites also exhibit this highly distinctive reduction technology. Among the later stage fluted preforms from the Ready/Lincoln Hills site is a specimen that exhibits an oblique transverse percussion flaking pattern strikingly similar to one

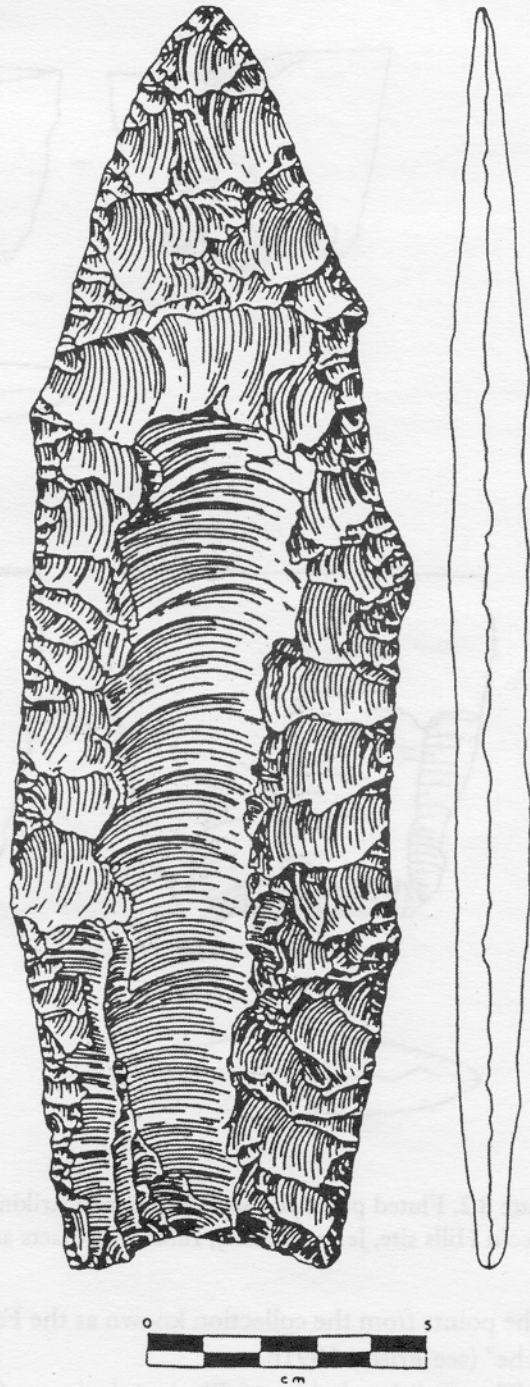


Figure 8.1. Obsidian fluted biface from Badger Mountain, Washington.

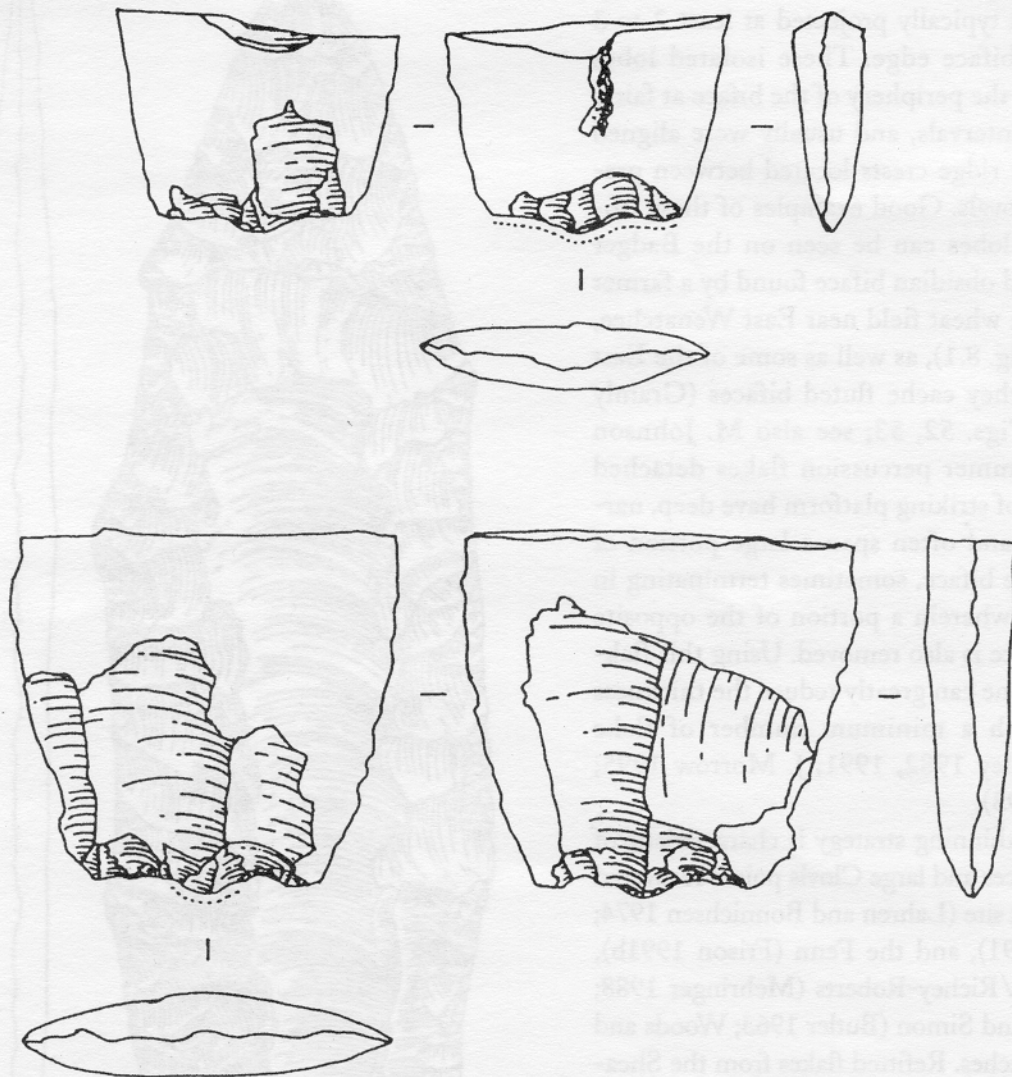


Figure 8.2. Fluted point preforms with intact striking platforms prepared for first flute removal from the Ready-Lincoln Hills site, Jersey County, Illinois (artifacts are actual size).

of the points from the collection known as the Fenn "cache" (see Frison 1991b).

The traditional view of Clovis point manufacture places the critical step of fluting near the end of the manufacturing sequence (e.g., Callahan 1979). The fluted preforms from Ready/Lincoln Hills,

Martens, and Struttman-Eikel clearly show that fluting was conducted at a more intermediate position in the reduction sequence, well before the preforms had achieved the shape and dimensions of finished points. Fluted Clovis preforms from all three of these sites are substantially longer, wider,

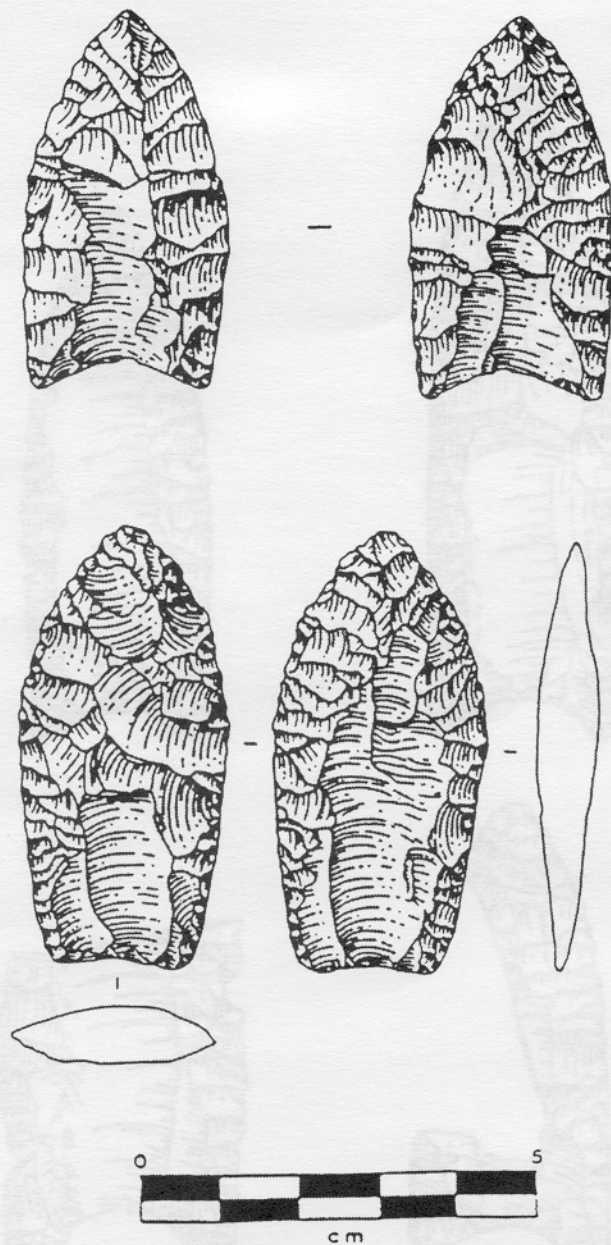


Figure 8.3. Western Clovis points exhibiting composite fluting (from J. Morrow 1996:Figure 58).

and thicker than the finished points. On average, preforms at the step of first flute removal are 19 mm wider and 3 to 4 mm thicker than the finished points. At the timing of the first flute removal, the bases of the preforms are generally moderately to slightly convex. Single and sometimes paired per-

cussion guide flakes preceded the flute removals on many of these preforms.

Striking platforms prepared for the first flute removal are intact on 12 specimens from the Ready/Lincoln Hills site (Fig. 8.2). These platforms are isolated lobes placed at or near the center of the typically convex basal edge, and they are morphologically similar to the platforms prepared for removal of deep transverse lateral thinning flakes as described above. The flute scars exhibit the same deep, narrow initiation characteristic of the transverse thinning flake scars. The initiation points of virtually all flute scars present on the Ready/Lincoln Hills site fluted preforms indicate their removal from well isolated platforms, placed at or near the biface center plane.

Following the first flute removal and preceding the second flute removal, many Clovis preforms from the Ready/Lincoln Hills site were subjected to some lateral percussion flaking. This flaking appears to have been aimed at removing any remaining irregularities from the second face to be fluted and to trim the terminations of the first flute removal. Bradley (1993:254) considers this lateral removal of a step or hinge fracture at the end of a flute scar to be "a diagnostic trait of High Plains Clovis point manufacture."

Striking platforms prepared for the second flute removal from the opposite face are intact on three specimens from the Ready/Lincoln Hills site. These striking platforms are similar to those prepared for the first flute removal, but there was a tendency for the basal edge to be straighter or even slightly concave.

Clovis fluting was probably accomplished using soft hammer percussion flaking. The bases of the preforms prepared for fluting are convex, straight or slightly concave, thus the basal ears would not interfere with a percussion blow. Though it warrants more rigorous experimentation, there seems to be a tendency for more frequent overshoot fractures (*outré passé*) in fluting done by direct, freehand percussion. About 25 percent of the fluted preforms from the Ready/Lin-

coln Hills, Martens, and Struttman-Eikel sites were broken by fluting overshots.

Following the removal of both flutes, the entire preform was reduced in thickness, trimmed, and shaped by further lateral percussion flaking. This series of flake removals was carefully executed so as to leave the major portions of the flute scars intact while bringing the rest of the body of the point to the approximate thickness of the finished form. As a result, the original margins of the flute scars are often considerably reduced by flake removals from the sides of the basal edges and across the distal end of the flute. Most of the finished fluted points from Ready/Lincoln Hills exhibit simple flutes, but in cases where stage 4 fluting had not sufficiently thinned and tapered the haft element of the biface, one or both of the faces were re-fluted, resulting in composite flutes. This feature is seen on some western Clovis points (Fig. 8.3).

Refluting or "secondary fluting" may have been accomplished by indirect percussion because the basal edge of the biface, at this stage, is moderately concave. Secondary flute scars are small in comparison to the flutes typically removed during stage 4. Pressure retouch and trimming brought the point to its final form, and the basal edges were then ground.

Finished Clovis points from the three midwestern sites examined here range considerably in length from 25 to over 100 mm. They are lanceolate in shape with parallel-sided to slightly contracting haft elements, some with very slightly flaring basal ears. Bases are shallowly concave with a basal concavity: basal width ratio averaging about 0.11 to 0.13. Flutes may be simple, multiple, or composite and may vary on the two faces of the point. The length and quality of the flutes is highly variable, with length usually less than 50 percent of the total length; however, this proportion varies greatly with the degree of point resharpening. The percussion and pressure flaking that followed fluting left the basal portion of most points with a flattened hexagonal cross-section rather than a pronounced bi-concave shape commonly seen on other fluted point forms. Blade flaking patterns vary from irregular to

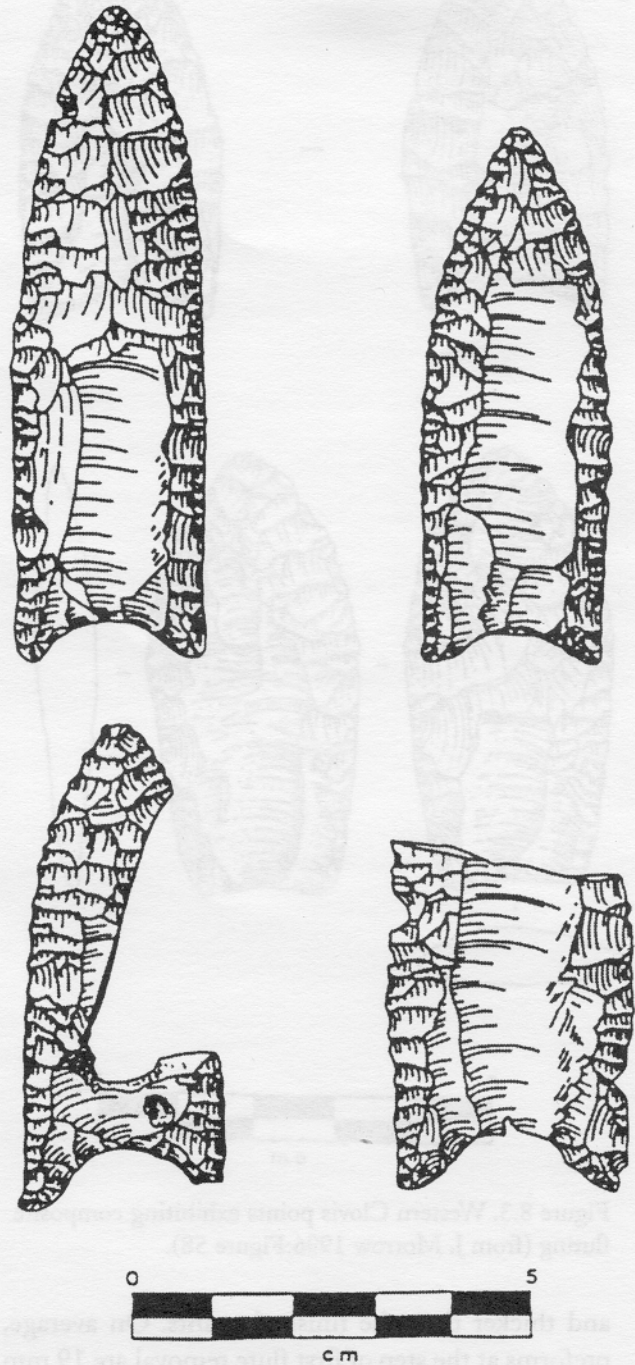


Figure 8.4. Gainey fluted points from the Butler site, Michigan.

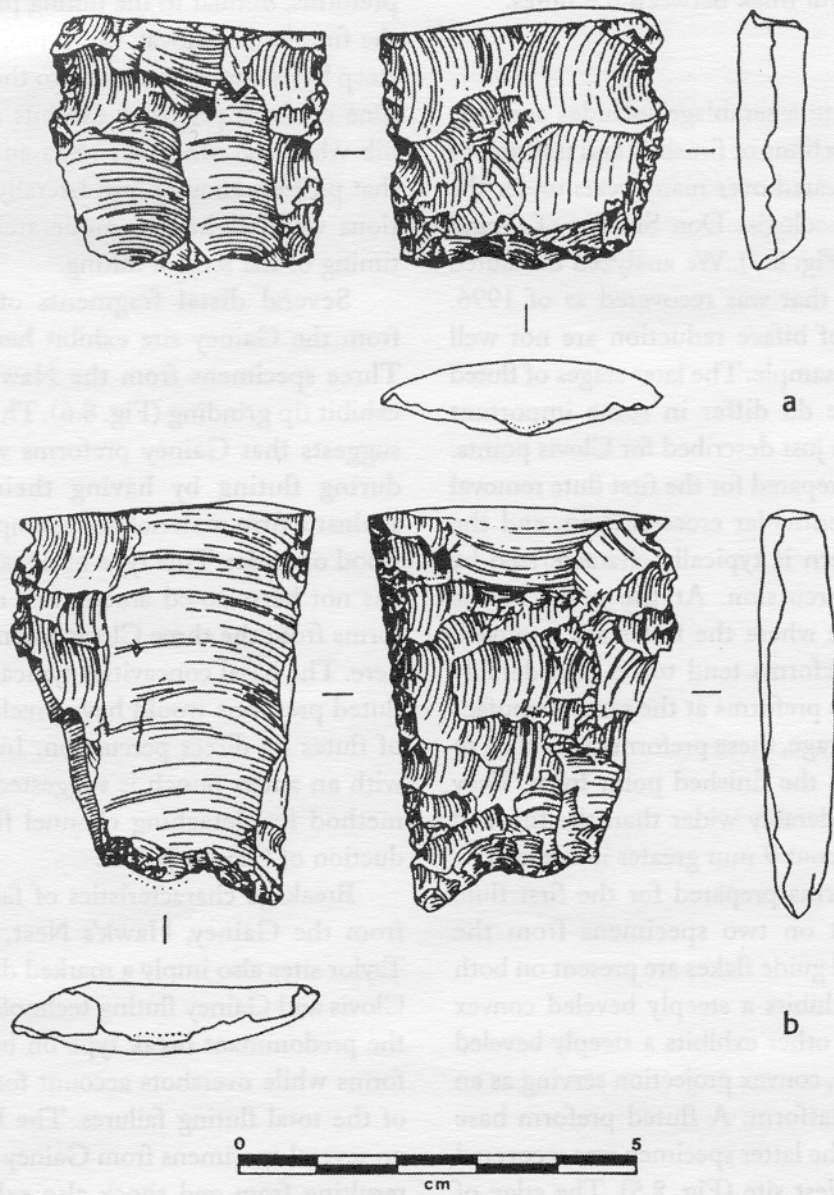


Figure 8.5. Fluted point performs with intact striking platforms prepared for flute removal from the Hawk's Nest site, Lake County, Illinois.

transverse to medial percussion with some pressure retouch and trimming. Large transverse percussion scars resulting from earlier stage reduction remain on some specimens, though on many these have been obliterated by subsequent lateral flaking. The

blades of resharpened and reworked points are often nearly covered by pressure flaking scars. In longitudinal section, Clovis points often exhibit a smooth, even taper from the distal end of the flutes to the base. Clovis points trend toward being

thicker and heavier than other fluted point forms, though there are exceptions. On average, Clovis points are 5 to 7 mm thick between the flutes.

Gainey Points

The Gainey site assemblage includes approximately equal proportions of finished and unfinished fluted bifaces excavated over many years under the supervision of archeologist Don Simons of Grand Blanc, Michigan (Fig. 8.4). We analyzed the fluted biface assemblage that was recovered as of 1996. The early stages of biface reduction are not well represented in this sample. The later stages of fluted point manufacture do differ in some important respects from those just described for Clovis points. Gainey preforms prepared for the first flute removal exhibit an even, lenticular cross-section, and the blade flaking pattern is typically characterized by refined, medial percussion. At the point in the reduction sequence where the flutes are removed, the Gainey site preforms tend to be considerably thinner than Clovis preforms at the same manufacturing step. On average, these preforms are only 1 to 2 mm thicker than the finished point form. They are, however, considerably wider than the finished points, averaging about 9 mm greater in breadth.

Striking platforms prepared for the first flute removal are intact on two specimens from the Gainey site. Lateral guide flakes are present on both specimens. One exhibits a steeply beveled convex basal edge and the other exhibits a steeply beveled base with a discrete, convex projection serving as an isolated striking platform. A fluted preform base nearly identical to the latter specimen was recovered from the Hawk's Nest site (Fig. 8.5). The edge of the fluting platform was trimmed so that it lay well below the centerplane, nearly at the level of the surface to be fluted. At the step of first flute removal, preform bases were convex to slightly concave.

Gainey site preforms at the step of second flute removal were of approximately the same dimensions as those at the first flute removal and there does not appear to have been much lateral shaping and thinning that occurred between the two flute

removals. Striking platforms prepared for the second flute removal remain on two of the Gainey site preforms. Similar to the fluting platforms set up for the first flute removal, these, too, were formed by a steep bevel and were set low to the face to be fluted. One of these preforms exhibits a slightly isolated nib while the other possesses an isolated platform that projects about 3 mm laterally. Basal configurations were slightly to moderately concave at the timing of the second fluting.

Several distal fragments of point preforms from the Gainey site exhibit heavily ground tips. Three specimens from the Hawk's Nest site also exhibit tip grinding (Fig. 8.6). This feature strongly suggests that Gainey preforms were immobilized during fluting by having their tips supported against a firm material, for example a piece of hard wood or antler. This type of distal tip modification has not been noted among any of the fluted preforms from the three Clovis assemblages examined here. The basal concavities typical of many Gainey fluted preforms would have precluded the removal of flutes by direct percussion. Indirect percussion with an antler punch is suggested as a more likely method for detaching channel flakes in the production of Gainey points.

Breakage characteristics of failed fluted points from the Gainey, Hawk's Nest, Steinmann, and Taylor sites also imply a marked difference between Clovis and Gainey fluting technology. End shock is the predominant break type on broken fluted preforms while overshots account for only 10 percent of the total fluting failures. The bending fractures on several specimens from Gainey and Hawk's Nest resulting from end shock also exhibit pronounced lipped projections. This latter characteristic suggests that considerable compressive forces accompanied the fracture, as with a preform under stress between the punch at one end and a hard support at the other. Split ear or perverse shear fractures are also represented in the Gainey and Hawk's Nest assemblages. This break type is not known from any of the Clovis preforms described above, but it is not uncommon in Folsom assemblages.

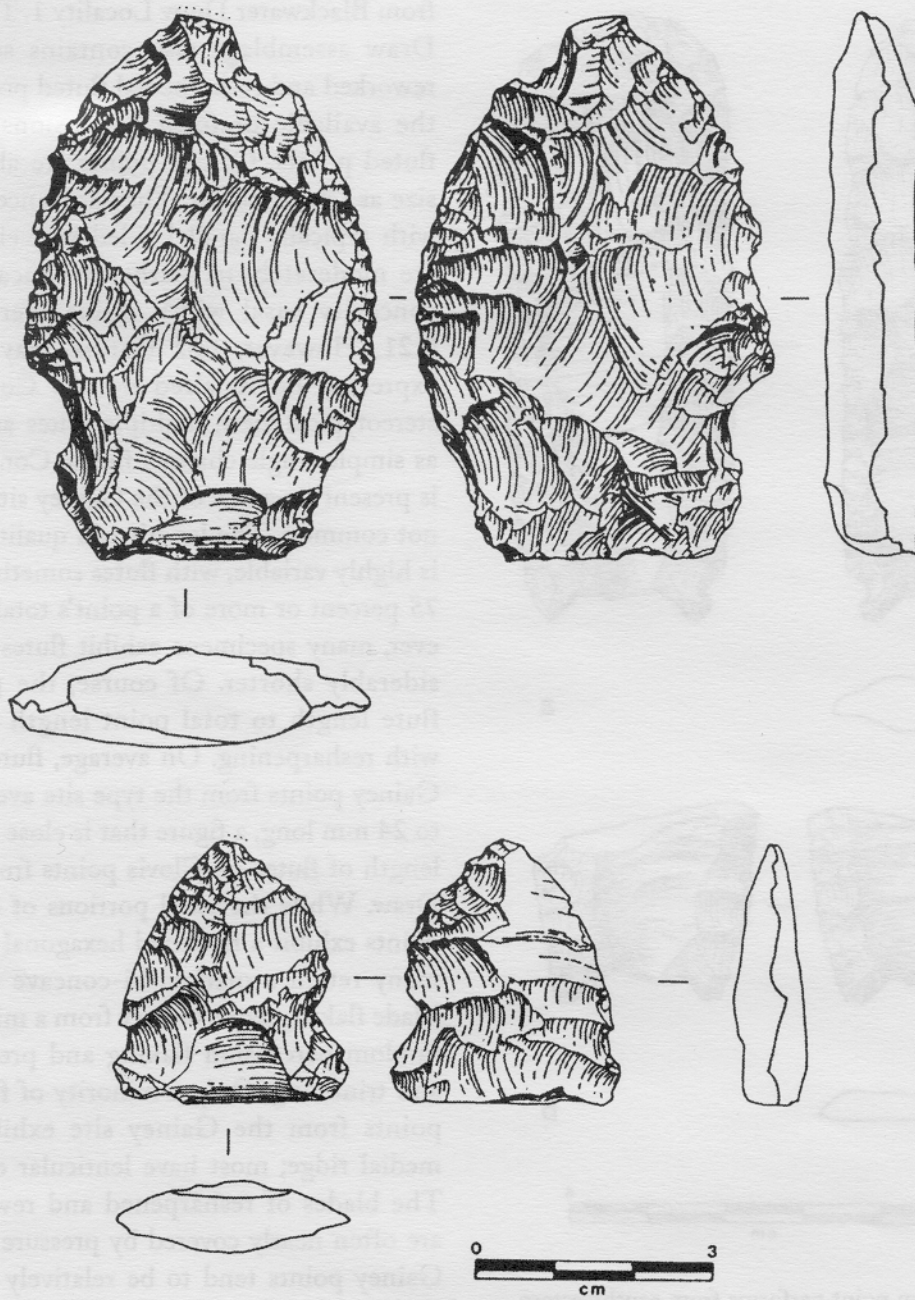


Figure 8.6. Fluted point preforms from the Hawk's Nest, Lake County, Illinois.

Following the removal of both flutes, the final shaping of Gainey points appears to have been accomplished predominantly through pressure flaking. Preforms were trimmed laterally but were not made much thinner. Post-fluting lateral pressure flaking often, but not always, resulted in a

slight narrowing of the margins of the channel scars. The points were finished by grinding the lower lateral and basal edges.

The assemblage of finished fluted points from the Gainey site is heavily fragmented, and most of the few complete points appear to have been

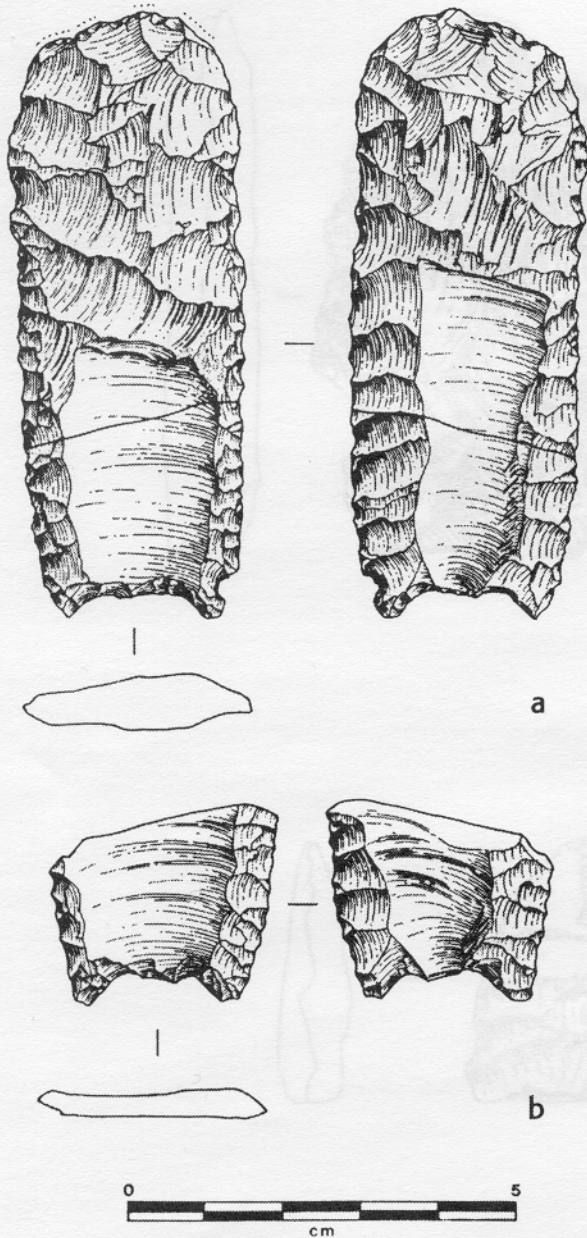


Figure 8.7. Folsom point performs from southwestern Iowa.

extensively resharpened and/or repaired. Under these circumstances, the Gainey site assemblage provides a somewhat skewed view of finished Gainey point morphology. In fact, mean metric attributes taken from all of the Gainey site finished points are not tremendously different from the mean values calculated for 14 Clovis points

from Blackwater Draw Locality 1. The Blackwater Draw assemblage also contains several heavily reworked and resharpened fluted points. Based on the available preform dimensions and finished fluted points, Gainey points are about the same size as Clovis points. They are lanceolate in shape with typically parallel-sided haft elements. Bases are moderately to markedly concave with basal concavity: basal width ratios averaging around 0.21. However, this feature may not be well expressed on repaired points. Contrary to the stereotypical view, multiple flutes are as common as simple single channel flutes. Composite fluting is present on a few of the Gainey site points but is not common. The length and quality of the flutes is highly variable, with flutes sometimes extending 75 percent or more of a point's total length; however, many specimens exhibit flutes that are considerably shorter. Of course, the proportion of flute length to total point length varies greatly with resharpening. On average, flutes on finished Gainey points from the type site average about 22 to 24 mm long, a figure that is close to the average length of flutes on Clovis points from Blackwater Draw. While the basal portions of some finished points exhibit a flattened hexagonal cross-section, many retain a marked bi-concave cross-section. Blade flaking patterns vary from a mix of medial to random percussion flaking and pressure retouch and trimming. Only a minority of finished fluted points from the Gainey site exhibit a marked medial ridge; most have lenticular cross-sections. The blades of resharpened and reworked points are often nearly covered by pressure flaking scars. Gainey points tend to be relatively thin between the flutes, averaging 4 to 5 mm.

Folsom Points

Aspects of Folsom point production are abundantly represented at numerous Folsom sites across the Southern and High Plains. The assemblage of Folsom points and preforms examined here from Mills County in southwestern Iowa are no less typical. Folsom point production has been described in

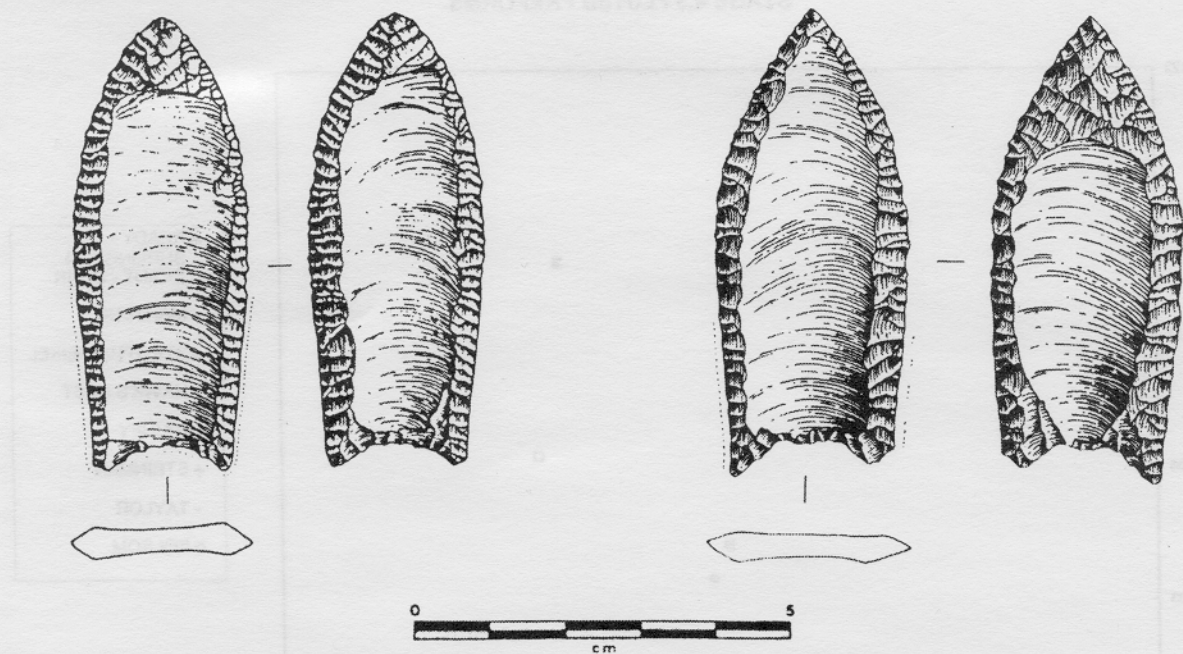


Figure 8.8. Folsom points from southwestern Iowa.

detail by Frison and Bradley (1980) and Tunnell (1977) and is only highlighted here.

Folsom preforms prepared for fluting are broader, though not much thicker, than the finished Folsom point. Specimens from southwest Iowa average about 8 mm wider but only 0.4 mm thicker than the finished form. The faces of the preforms were prepared by regular pressure flaking over previous percussion work. Fluting platforms were prepared by beveling the basal edge and isolating a projecting nib in the center of the base that served as the striking platform (Fig. 8.7). Typically, the platforms were set low to the face to be fluted. The distal ends of Folsom preforms are often blunt, steeply beveled, and sometimes dulled by grinding.

Though the manner in which Folsom flutes were actually detached remains a hotly contested issue among both archaeologists and modern flintknappers, the depth of the basal concavity typical of Folsom preforms would effectively rule out direct percussion (cf. Patten, Chapter 15). Indirect percussion, pressure, and lever assisted pressure are all

workable methods for reproducing Folsom-like flutes. The distal tip treatment implies that Folsom preforms were placed against an unyielding surface during flute removal. Though the fluted Folsom preform sample from southwestern Iowa is small (9 specimens), end shock breaks predominate, and overshoots account for just over 10 percent.

Following the satisfactory fluting of both faces, Folsom preforms were carefully shaped and trimmed by pressure flaking. The character of the final edge retouch and finishing ranges from medium-sized pressure flakes to very fine pressure flake scars only a few mm wide (Fig. 8.8). As with other fluted points, the lower and basal edges were dulled by grinding.

Pristine Folsom points tend to be small compared to other fluted point forms, averaging 30 to 50 mm in length. They are typically very thin, in the 3 to 4 mm range, and even thinner between the flutes. Their form is parallel to convex-sided lanceolate. On unrepaired Folsom points, bases are moderately to markedly concave, averaging between

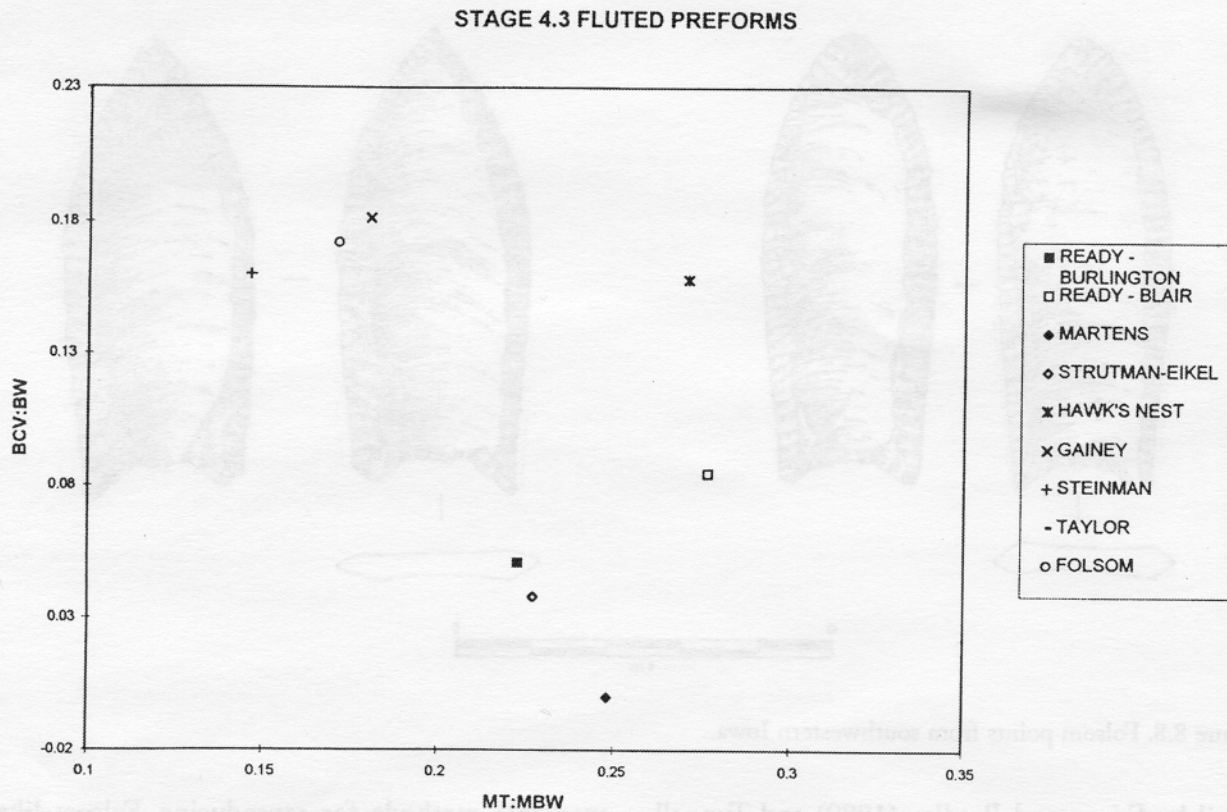


Figure 8.9. Relative thickness and basal proportions of fluted point preforms in the study assemblages.

0.12 and 0.20 in basal convexity:basal width ratio. Stereotypically, both faces were fluted to near the tip, but many Folsom points exhibit shorter, less impressive flutes on one or both faces.

DISCUSSION

Clovis and Gainey points differ in several important aspects of their manufacture. First, Clovis preforms were typically thinned by transverse percussion flaking utilizing isolated, centered striking platforms. Gainey preforms characteristically exhibit medial percussion flaking. Second, while both Clovis and Gainey preforms were fluted from isolated striking platforms, Clovis fluting platforms were usually convex lobes positioned at or near the centerplane of the biface while Gainey fluting platforms were set low to the face to be fluted by

steeply beveling the basal edge and shaping a projecting nib. Clovis flute removals were comparatively massive in width and thickness compared to Gainey flutes, though flute dimensions are somewhat similar on the finished points due to post-fluting trimming and retouch. Third, Clovis points were probably fluted by direct soft hammer percussion while Gainey points were fluted by some other means, such as indirect percussion. Fourth, Clovis preforms were considerably thicker at the time they were fluted (Fig. 8.9). Following the flute removals, Clovis preforms were considerably reduced in thickness by further soft hammer percussion flaking. In contrast, Gainey preforms were fluted at a thickness that was much closer to that of the finished form, and most post-fluting shaping appears to have been done by pressure flaking.

COMPARISON OF READY, GAINEY, AND FOLSOM REDUCTION SEQUENCES

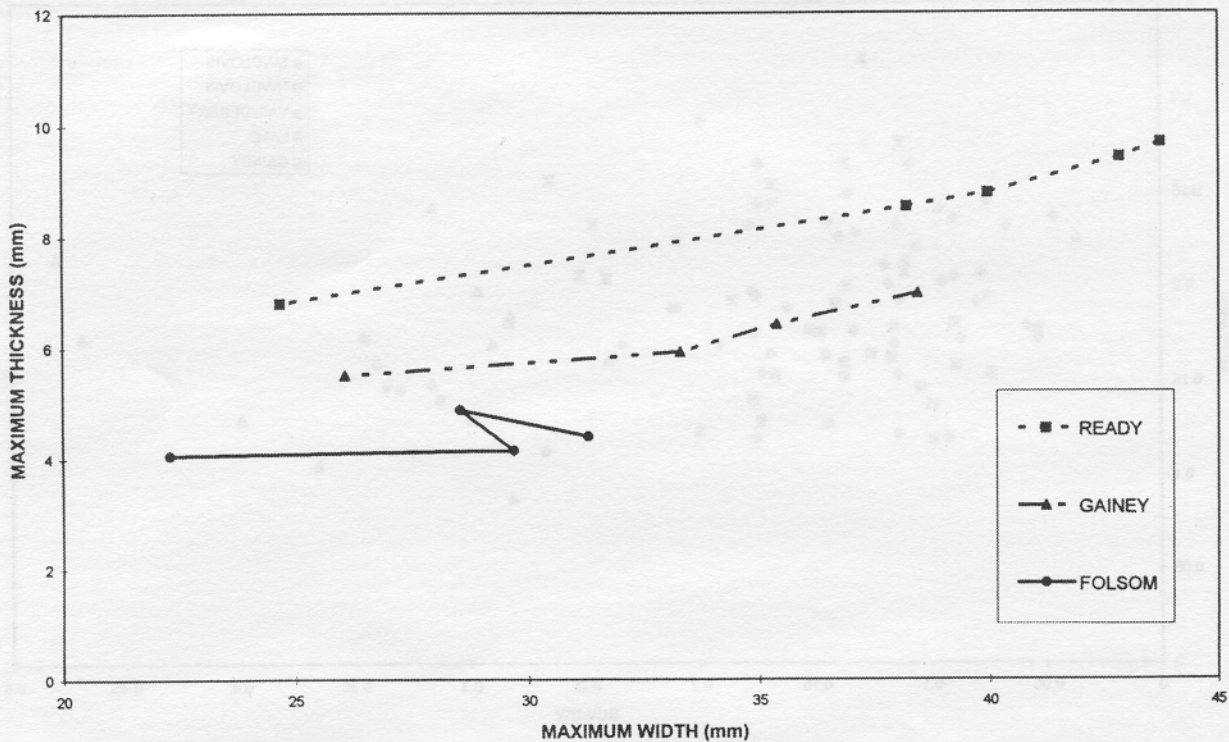


Figure 8.10. Relative reduction sequences of Clovis, Gainey, and Folsom points.

Technologically, the Gainey point manufacturing sequence shares many features with that used to produce Folsom points. Both Folsom and Gainey points were fluted from isolated striking platforms set low to the faces to be fluted. Folsom and Gainey points were fluted at a point in their reduction sequences where they were not much thicker than the desired finished products. Following flute removals, both point forms were finished mostly through pressure flaking. Modifications of the distal tips of both Folsom and Gainey preforms suggest that they were pressed against a firm support during the fluting process. Gainey and Folsom preforms were both probably fluted by some means other than direct percussion (see Chapters 12–15).

While the manufacturing sequences of Clovis and Gainey points are quite different, finished

points of both types are not always so distinct. Stereotypically, Gainey points exhibit deeper basal concavities than Clovis points, and they are on average thinner between the flutes. Gainey points may exhibit longer flutes, but the flutes on Gainey points are about the same dimensions as those seen on Clovis points. Any or all of these distinctions can be affected by projectile point resharpening and repair. In relatively pristine conditions, Clovis and Gainey points tend to be fairly easily distinguished. However, once these points have been subjected to a considerable degree of maintenance, the two forms can end up looking very similar. Given the apparent predisposition for Early Paleoindian groups to squeeze the maximum utility out of their stone tools, this issue of typological convergence through maintenance practices will be a continuing challenge in

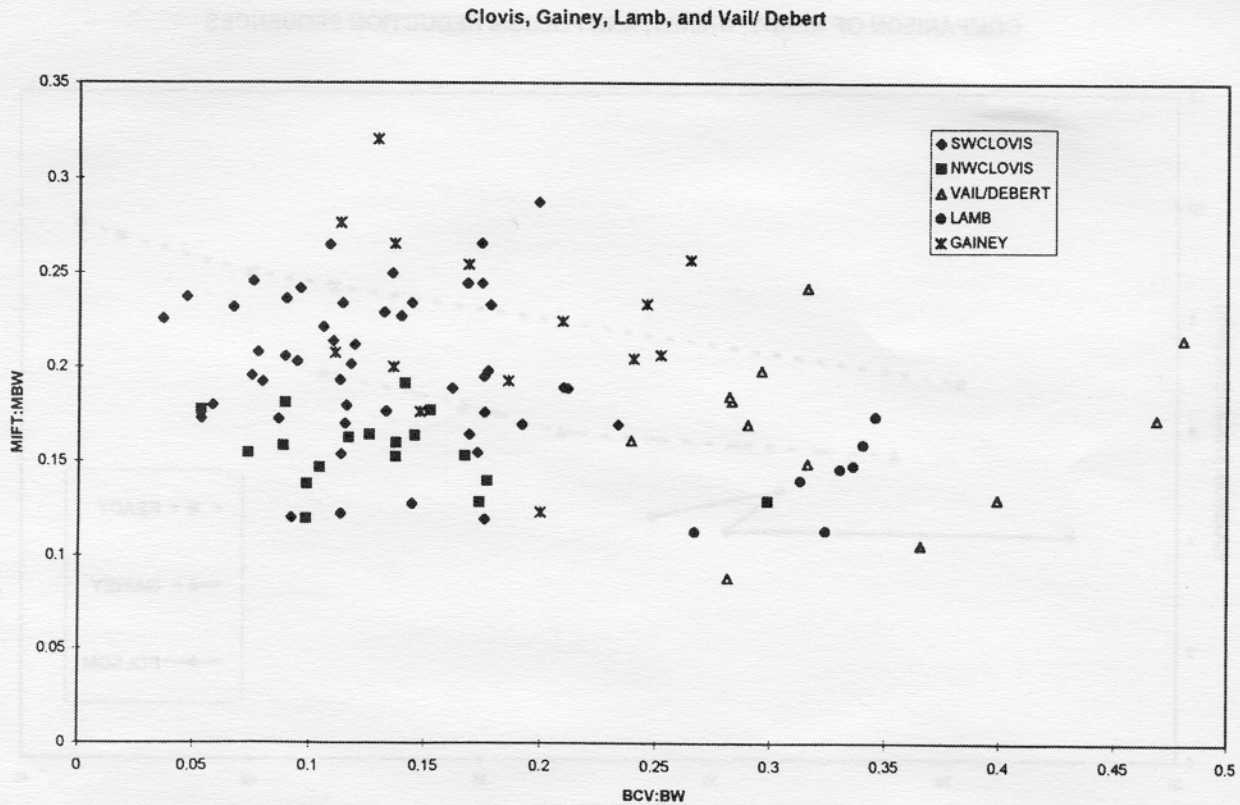


Figure 8.11. Morphological variation in finished fluted point assemblages.

fluted point typology. Projectile point resharpener and repair must be seriously considered in fluted point typology.

The Gainey Complex can be interpreted in a variety of ways. From a morphological and technological perspective, Gainey points are somewhat intermediate between Clovis and Folsom. From this, it could be argued that Gainey points are the "missing link" between these two well known fluted point complexes and that they fall into a time frame between Clovis and Folsom (Fig. 8.10). Although Gainey and Folsom points have somewhat overlapping geographic distributions, Folsom points occur predominantly in the Great Plains while Gainey points occur predominantly in the Eastern Woodlands. Further, there does not appear to have been much of a time gap between Clovis and Folsom on the Great plains; in fact, the Clovis and Folsom

complexes might even have overlapped slightly in time. A developmental sequence of Clovis-Gainey-Folsom would probably be an oversimplification.

In terms of basal concavity, Gainey points are intermediate between western Clovis and the more deeply indented base fluted points characteristic of the Lamb, Vail, and Debert sites in northeastern North America (Fig. 8.11). A temporal cline could be represented, with Gainey falling in time between western Clovis (ca. 11,400–11,000 RCYBP) and Vail and Debert (ca. 10,600–10,500 RCYBP). This would place the Gainey Complex in a time frame roughly equal to Folsom on the Great Plains.

CONCLUSION

The archaeological record of Early Paleoindians in the Midwest will continue to present challenges for archaeologists working in the region. Without ques-

tion, more and better data on this remote period are sorely needed. Many of the competing theories, ideas, and debates regarding the initial peopling of this part of the world might be settled with a few handfuls of reliable radiocarbon dates. Great advances have been made in the past decade, and regions that historically had no stratified or reliably dated Paleoindian components now have them. The needed sites are out there, but because of geological factors, it will take considerable diligence to find them. Until then, Paleoindian researchers will do as they always have—work with what they have. Under these circumstances, it is all the more important that we make the most of the available data.

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